

WHAT IS CLAIMED:

Sub A17 1. A circuit for adaptively amplifying an input signal, the circuit comprising:
an adaptive filter connected to receive the input signal and to amplify a predetermined frequency range of the input signal by an amount based on an amplification control signal input to the adaptive filter;

a comparator connected to receive the amplified signal from the adaptive filter and a predetermined threshold signal, the comparator outputting a digital comparison signal indicating whether the amplified signal is greater than the threshold signal; and

a filter adaptation circuit connected to receive the digital signal and the input signal and to modify the amplification control signal based on the digital signal and the input signal.

2. The circuit of claim 1, wherein the input signal is a SCSI (small computer system interface) signal and the adaptive filter reduces inter-symbol interference (ISI) in the SCSI signal.

3. The circuit of claim 1, wherein the predetermined frequency range amplified by the adaptive filter consists of high frequency components of the input signal.

4. The circuit of claim 1, wherein the adaptive filter is a third order Bessel filter.

5. The circuit of claim 1, further comprising
a digital-to-analog converter converted connected between the adaptive filter and the filter adaptation circuit, the digital-to-analog converter converting a digital version of the

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6. The circuit of claim 5, wherein the filter adaptation circuit further comprises:

a first circuit connected to receive the digital signal, the input signal, and a system clock signal, the first circuit converting the digital signal, the input signal, and the system clock signal into a first output signal that is asserted on a falling edge of a digitized version of the input signal when the input signal is above a level of the predetermined threshold signal and a second output signal that is asserted on the falling edge of the digitized version of the input signal when the input signal is below the level of the predetermined threshold signal; and

a second circuit connected to receive the first and second output signals and to increase the amplification control signal when the first signal is asserted and the second signal is not asserted and to decrease the amplification control signal when the first signal is not asserted and the second signal is asserted.

7. A method of canceling inter-symbol interference (ISI) in a SCSI (small computer system interface) signal, the method comprising:

amplifying high frequency components of an input SCSI signal by an amount based on an amplification control signal;

comparing the amplified signal with a predetermined threshold level; and

iteratively modifying the amplification control signal based on a result of the comparison of the amplified signal with the predetermined threshold level.

8. The method of claim 7, wherein modifying the amplitude control signal includes:

increasing the amplitude control signal on a falling edge of a digitized version of the input signal when the input signal is above the predetermined threshold level and decreasing the amplitude control signal on the falling edge of the digitized version of the input signal when the input signal is below the predetermined threshold level.

9. The method of claim 7, wherein the threshold level is a voltage offset from the voltage level used to convert the input SCSI signal to a digital value.

10. The method of claim 9, wherein the threshold voltage level is below the voltage level used to convert the input SCSI signal to a digital value.

11. The method of claim 7, wherein the amplification of the high frequency components is performed using a third order Bessel filter.

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